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00:00:00,000 --> 00:00:10,000

On this episode of MythBusters, the Widowmaker, could you build a jet pack from plans on the

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00:00:10,000 --> 00:00:11,000

Internet?

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00:00:11,000 --> 00:00:12,320

I'm ready to go, man!

4

00:00:12,320 --> 00:00:16,480

Adam and Janie rise to the challenge of their toughest ever myth.

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00:00:16,480 --> 00:00:18,800

I want MythBusters done!

6

00:00:18,800 --> 00:00:23,000

And the build team suffers for science in the myth of pyramid power.

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00:00:23,000 --> 00:00:25,000

Baby, give us a kiss.

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00:00:25,000 --> 00:00:28,000

Who are the MythBusters?

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00:00:28,000 --> 00:00:31,000

Is my missing an eyebrow?

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00:00:31,000 --> 00:00:32,000

Adam Savage

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00:00:32,000 --> 00:00:35,000

I reject the reality and substitute my own.

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00:00:35,000 --> 00:00:36,000

And Jamie Heineman

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00:00:36,000 --> 00:00:37,000

Quack, damn you.

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00:00:37,000 --> 00:00:40,000

I wouldn't say Jamie's an evil genius.

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00:00:40,000 --> 00:00:44,000

Between them more than 30 years special effects experience.

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00:00:44,000 --> 00:00:46,000

We're either going to die or we're going to fly.

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00:00:46,000 --> 00:00:50,000

They don't just tell the myths, they put them to the test.

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00:00:58,000 --> 00:01:00,000

Adam, we've got a really great story here.

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00:01:00,000 --> 00:01:02,000

This is just the kind of thing that I love.

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00:01:02,000 --> 00:01:05,000

This is a really difficult technical challenge.

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00:01:05,000 --> 00:01:08,000

It's an engineering feat we've got to pull off here.

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00:01:08,000 --> 00:01:09,000

Absolutely.

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00:01:09,000 --> 00:01:13,000

We have purchased some plans off the web that anybody could buy for under 100 bucks.

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00:01:13,000 --> 00:01:21,000

And we're going to see if we can use those plans to build in our shop a personal, functional jet pack.

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00:01:21,000 --> 00:01:23,000

And of course we only have what?

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00:01:23,000 --> 00:01:25,000

About 10,000 bucks in a month?

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00:01:25,000 --> 00:01:29,000

Well, it wouldn't be MythBusters without that kind of crunch, would it?

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00:01:29,000 --> 00:01:35,000

The quest to build a personal flying machine is as old as aviation itself.

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00:01:35,000 --> 00:01:46,000

It's my strong conviction that by utilizing these inner universal forces, we shall all be able to fly like the birds.

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00:01:46,000 --> 00:01:54,000

The MythBusters are well qualified to join a procession of daredevil inventors hell bent on avoiding traffic jams.

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00:01:54,000 --> 00:01:56,000

That's how it is, it can be done.

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00:01:56,000 --> 00:02:00,000

The track record isn't exactly encouraging.

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00:02:03,000 --> 00:02:08,000

So is the idea of a homemade jet pack just a dream?

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00:02:08,000 --> 00:02:10,000

So what are we going to build here exactly?

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00:02:10,000 --> 00:02:12,000

What do the plans say our jet pack looks like?

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00:02:12,000 --> 00:02:15,000

Well, I don't see any jet engines anywhere on this thing.

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00:02:15,000 --> 00:02:21,000

What I see is a gas engine goes in the middle of your back and a couple of propellers inside some ducts.

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00:02:21,000 --> 00:02:27,000

So it's more of a vertical take off helicopter ducted fan housing kind of thing?

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00:02:27,000 --> 00:02:32,000

Yeah, it's smaller than a helicopter. It's something you could carry around, but that's the gist of it.

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00:02:32,000 --> 00:02:33,000

But it ain't no jet?

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00:02:33,000 --> 00:02:34,000

No jet.

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00:02:35,000 --> 00:02:41,000

It's actually a backpack powered by a 60 horsepower engine which drives two ducted fans.

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00:02:43,000 --> 00:02:50,000

The cowlings create lift and thrust and according to the designers should be able to carry a 200 pound pilot.

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00:02:51,000 --> 00:02:57,000

The plans are less than comprehensive so it's a case of join the dots and fill in the gaps.

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00:02:57,000 --> 00:03:02,000

That's the funky thing about these plans. They do whatever the hell you want and you're going to be flying around like crazy.

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00:03:02,000 --> 00:03:04,000

It's great. You'll go up 50 miles an hour.

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00:03:04,000 --> 00:03:12,000

With limited time and budget, Adam and Jamie will need all the help they can get so the MythMusters support team swings into gear.

48

00:03:12,000 --> 00:03:15,000

I have a question about the Rotax 503 engine.

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00:03:15,000 --> 00:03:20,000

Jamie talks to aviation experts about the components spec'd in the plans.

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00:03:20,000 --> 00:03:25,000

Do you know of anybody that has followed these plans then that has actually flown?

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00:03:25,000 --> 00:03:28,000

Oh yeah, it'd be extremely dangerous.

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00:03:28,000 --> 00:03:33,000

Then he crunches some numbers and comes up with a verdict.

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00:03:33,000 --> 00:03:43,000

I'm actually encouraged that based on the considerable poking around that I've done with all of the major components, it is theoretically possible that this could work.

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00:03:43,000 --> 00:03:45,000

Can you see Jamie like this?

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00:03:46,000 --> 00:03:53,000

To their knowledge, nobody has ever flown a jet pack like this one.

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00:03:53,000 --> 00:03:59,000

So Adam and Jamie hit the road to find out about some that have got airborne.

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00:03:59,000 --> 00:04:04,000

They're meeting Nino Amarino, an expert in rocket packs.

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00:04:04,000 --> 00:04:09,000

Wow. Is this a jet pack?

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00:04:09,000 --> 00:04:14,000

No, it's actually a rocket pack. This actually uses rocket fuel and rocket engines.

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00:04:14,000 --> 00:04:17,000

The actual engine is on top and these are the nozzles on each side.

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00:04:17,000 --> 00:04:20,000

Well, it seems like a pretty simple unit as far as that goes.

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00:04:20,000 --> 00:04:27,000

I mean, I'm sure there's more than meets the eye here, but what's the biggest difficulty about actually making this practical?

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00:04:27,000 --> 00:04:33,000

Well, it looks simple at first sight, although there have been over 100 people have tried and all of them have failed.

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00:04:34,000 --> 00:04:45,000

The first attempts to build modern rocket packs began in the 1950s and met with about as much success as the efforts earlier in the century.

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00:04:45,000 --> 00:04:50,000

But the possibility of airborne infantry was enough to attract military dollars.

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00:04:53,000 --> 00:04:59,000

The breakthrough came in 1961 with a device designed by Wendell Moore of Bell Aerosystems.

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00:05:00,000 --> 00:05:08,000

As the operating envelope was extended, the rocket pack reached altitudes of 60 feet and speeds of up to 60 miles per hour.

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00:05:10,000 --> 00:05:15,000

But it was too noisy so the military pulled the plug on the project.

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00:05:15,000 --> 00:05:23,000

Everybody seems to be working at some feverish pits to develop a personal flying device, you know, that everyone could be flying.

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00:05:23,000 --> 00:05:26,000

This is some sort of utopian dream. Why do you think that is?

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00:05:26,000 --> 00:05:34,000

Well, actually, the main reason why it is something that everybody wants to build is because of all the flying devices that men has built,

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00:05:34,000 --> 00:05:39,000

this is the only one that the regular Joe in the streets has not been able to duplicate yet.

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00:05:39,000 --> 00:05:49,000

Well, I tell you, I can understand why this is such a seductive idea to people because, you know, it's like, okay, I'm ready to go to work, honey, I'll see you later, you know.

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00:05:50,000 --> 00:05:57,000

When Jamie grows up, he wants to be a rocket man.

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00:06:01,000 --> 00:06:03,000

I've never seen Jamie so happy in my life.

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00:06:06,000 --> 00:06:14,000

Fired up by the rocket pack, Adam and Jamie hit the scrap yards to search out raw materials for their own flying machine.

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00:06:14,000 --> 00:06:17,000

Look at these! Oh my God, this is great!

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00:06:17,000 --> 00:06:21,000

This is the average American six months supply of soda power.

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00:06:21,000 --> 00:06:25,000

The towers of twisted metal loosen some of Adam's screws.

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00:06:25,000 --> 00:06:31,000

Right, well, I mean, this piece behind me, I call it the A-fist II.

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00:06:31,000 --> 00:06:40,000

And I mean, it's really about how confusing, you know, society is because, you know, it's all a jumble, isn't it?

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00:06:40,000 --> 00:06:46,000

In the world of scrap, Adam and Jamie are pinups, and they're mobbed by fellow enthusiasts.

83

00:06:46,000 --> 00:06:50,000

So what are we building? We're building a jet pack. Personal jet pack.

84

00:06:50,000 --> 00:06:53,000

Oh, we're either going to die or we're going to fly.

85

00:06:53,000 --> 00:06:55,000

Well, let's hope you fly.

86

00:06:55,000 --> 00:07:01,000

They're looking for aluminum, the plans recommended as light, tough, and perfect for aircraft.

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00:07:01,000 --> 00:07:03,000

There's a machine a whole wing out of that.

88

00:07:03,000 --> 00:07:08,000

It's funny what gets us excited, isn't it? I don't think I've ever seen a solid jet of aluminum that big.

89

00:07:08,000 --> 00:07:11,000

It's the second biggest piece of aluminum I've ever seen.

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00:07:11,000 --> 00:07:15,000

It just, like, gets me all worked up just looking at it.

91

00:07:16,000 --> 00:07:23,000

After the obligatory drooling, the guys get down to the job at hand and come away happy shoppers.

92

00:07:23,000 --> 00:07:28,000

I can't take Jamie and I to a place like this and have us just leave with what we came for.

93

00:07:28,000 --> 00:07:34,000

This big plate of 16th inch aluminum is going to be most of the structure on the backpack.

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00:07:34,000 --> 00:07:41,000

This angle iron is going to be some of the cross structure along with the arms for actually steering and controlling.

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00:07:41,000 --> 00:07:45,000

It's all really fantastically useful stuff and I love working with aluminum.

96

00:07:45,000 --> 00:07:47,000

It's hilarious from the sun.

97

00:07:47,000 --> 00:07:49,000

I love aluminum.

98

00:07:49,000 --> 00:07:51,000

Aluminum? I love you.

99

00:08:00,000 --> 00:08:07,000

Myth number two comes from ancient Egypt and involves a magical mathematical formula.

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00:08:07,000 --> 00:08:15,000

According to some, the pyramids incorporate a sacred geometry which help to preserve the mummified remains of the pharaohs.

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00:08:15,000 --> 00:08:24,000

Furthermore, they claim that this mystical math can work modern miracles like keep fruit fresh or razor blade sharp.

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00:08:24,000 --> 00:08:29,000

Apparently, they can even reinvigorate an overworked myth buster.

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00:08:29,000 --> 00:08:37,000

You know, normally we try and stay away from some of the oogie boogie myths but it's time to go attack pyramid power.

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00:08:37,000 --> 00:08:43,000

It is reputed to do everything from keep your razors sharp to keeping your milk and fruit fresh.

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00:08:43,000 --> 00:08:49,000

And I think you too are the perfect people to take this test and see what we can do with it.

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00:08:49,000 --> 00:08:57,000

Well as a true scientist, you do have to walk in with an open mind without any preconceived notions and put it to a very rigorous testing.

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00:08:57,000 --> 00:09:00,000

You're going to have to build a whole bunch of pyramids in a very short period of time.

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00:09:00,000 --> 00:09:02,000

Alright, I'm going to go back to sleep.

109

00:09:02,000 --> 00:09:04,000

Ready, Knight?

110

00:09:04,000 --> 00:09:07,000

So can the build team crack this cosmic code?

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00:09:07,000 --> 00:09:09,000

Where is that formula?

112

00:09:09,000 --> 00:09:15,000

First, they must erect their own pyramids by following the instructions of new age myth mongers.

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00:09:15,000 --> 00:09:17,000

That doesn't make sense.

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00:09:17,000 --> 00:09:23,000

It's all as clear as mud so they decide to seek enlightenment from someone who walks the walk.

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00:09:23,000 --> 00:09:26,000

True believer, Jerry Tomlinson.

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00:09:26,000 --> 00:09:30,000

Okay Jerry, so you're our self-proclaimed pyramid freak?

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00:09:30,000 --> 00:09:33,000

We got lots of questions.

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00:09:33,000 --> 00:09:36,000

So you're totally convinced that there is power with these pyramids?

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00:09:36,000 --> 00:09:41,000

Oh yeah. A guy in Czechoslovakia patented the Cheops razor blade sharpener.

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00:09:41,000 --> 00:09:47,000

And he put razor blades on it and they would dull razor blades and they would be sharper, you know.

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00:09:47,000 --> 00:09:54,000

And I tried it once, I didn't know if it was about a week and it seemed to be sharper.

122

00:09:54,000 --> 00:09:57,000

Not that convincing, eh, Tari?

123

00:09:57,000 --> 00:10:02,000

Do you think that the materials of the pyramid are made from have any effect on the experiment?

124

00:10:02,000 --> 00:10:09,000

Uh, well, copper is a real cool metal.

125

00:10:09,000 --> 00:10:13,000

But I'm supposed to work, yeah, maybe.

126

00:10:13,000 --> 00:10:14,000

So I thought...

127

00:10:14,000 --> 00:10:18,000

Oh no, excuse me, no, no, no, no, I've been told that that's not true.

128

00:10:18,000 --> 00:10:21,000

Because you can do it just the shape is a...

129

00:10:21,000 --> 00:10:27,000

Maybe what you use has some effect, but I think it's primarily the shape.

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00:10:27,000 --> 00:10:31,000

The build team leaves Jerry a little older, but none the wiser.

131

00:10:31,000 --> 00:10:35,000

Look you guys, we just got our mail order pyramid.

132

00:10:35,000 --> 00:10:39,000

Is this the one that's supposed to sharpen razor blades?

133

00:10:39,000 --> 00:10:40,000

This is the one.

134

00:10:40,000 --> 00:10:41,000

Wait a minute.

135

00:10:41,000 --> 00:10:42,000

I think we've been had.

136

00:10:42,000 --> 00:10:44,000

How much did we pay for this?

137

00:10:44,000 --> 00:10:47,000

38 bucks, I think we're the suckers.

138

00:10:47,000 --> 00:10:53,000

Back at the shop, there's been a delivery, but if it does keep fruit fresh and razor sharp,

139

00:10:53,000 --> 00:10:56,000

38 bucks is money well spent.

140

00:10:56,000 --> 00:11:01,000

While apparently the material doesn't affect the pyramid's power, the dimensions do.

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00:11:01,000 --> 00:11:07,000

For maximum potency, the model must be an exact scale of Egypt's golden pyramid.

142

00:11:07,000 --> 00:11:11,000

And this one, well, looks a little wonky.

143

00:11:11,000 --> 00:11:12,000

I mean, here's our pyramid.

144

00:11:12,000 --> 00:11:13,000

Do you feel any power?

145

00:11:13,000 --> 00:11:14,000

Come here.

146

00:11:14,000 --> 00:11:15,000

Don't point it at me.

147

00:11:15,000 --> 00:11:16,000

Don't aim it at me.

148

00:11:16,000 --> 00:11:17,000

Come here.

149

00:11:17,000 --> 00:11:18,000

Let's put it over your head.

150

00:11:18,000 --> 00:11:20,000

Do you feel light headed?

151

00:11:20,000 --> 00:11:24,000

I'm reading your thoughts right now.

152

00:11:24,000 --> 00:11:29,000

And Tari's thinking that pyramid power could be a long way off.

153

00:11:47,000 --> 00:11:51,000

They're on the trail of an ultralight engine at California Power Systems.

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00:11:51,000 --> 00:11:54,000

What can I do for you guys?

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00:11:54,000 --> 00:11:57,000

Looking for a Rotax 503 dual-car.

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00:11:57,000 --> 00:12:00,000

I understand you have one in stock.

157

00:12:00,000 --> 00:12:02,000

Can we have a look at it?

158

00:12:02,000 --> 00:12:03,000

Sure, I can bring one out here.

159

00:12:03,000 --> 00:12:09,000

This is the one specced in the plans, but Mike suggests a lighter and more powerful alternative,

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00:12:09,000 --> 00:12:12,000

the water-cooled Rotex 583.

161

00:12:12,000 --> 00:12:15,000

I can't see how this possibly couldn't push you off the ground.

162

00:12:15,000 --> 00:12:17,000

It has that much power.

163

00:12:17,000 --> 00:12:18,000

Wow.

164

00:12:18,000 --> 00:12:19,000

That's what we want.

165

00:12:19,000 --> 00:12:20,000

That's what we want to hear.

166

00:12:20,000 --> 00:12:24,000

It's not the exact engine specified in the plans, but it's close enough.

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00:12:24,000 --> 00:12:28,000

Any reasonable person with the doe would go for the Rotex 583.

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00:12:28,000 --> 00:12:34,000

I mean, it's just a lot more power for just about the same weight, actually a little bit less,

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00:12:34,000 --> 00:12:37,000

and every pound counts.

170

00:12:37,000 --> 00:12:41,000

And the truck of this car is our chance for immortality.

171

00:12:41,000 --> 00:12:44,000

That thing has about as much horsepower as this van does.

172

00:12:44,000 --> 00:12:47,000

It's not going to be like strapping an automobile engine on your back.

173

00:12:47,000 --> 00:12:48,000

Let's get back to the shop.

174

00:12:48,000 --> 00:12:51,000

Let's make this sucker.

175

00:12:51,000 --> 00:12:56,000

Back at M5, the build begins, and right from the get-go, Jamie's fired up.

176

00:12:56,000 --> 00:13:00,000

This is exactly the kind of project that really motivates me personally,

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00:13:00,000 --> 00:13:03,000

so I'm going to be losing some sleep over this one.

178

00:13:03,000 --> 00:13:05,000

Starting to look like an aircraft part.

179

00:13:05,000 --> 00:13:08,000

All right, ladies and gentlemen, here we go.

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00:13:08,000 --> 00:13:13,000

While Jamie works on the main structure of the backpack, Adam starts on the cowlings.

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00:13:13,000 --> 00:13:18,000

Without them, the thrust generated by the propellers is dispersed.

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00:13:18,000 --> 00:13:22,000

When the cowlings are added, the thrust is concentrated.

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00:13:22,000 --> 00:13:28,000

They also create suction around their top edge, causing lift, like an airplane's wing.

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00:13:28,000 --> 00:13:35,000

But the ducts only work if the clearance between propeller tips and cowling is less than $1 \frac{1}{16}$ ".

185

00:13:36,000 --> 00:13:42,000

According to the plans, the ducted fans should provide 500 lbs of thrust,

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00:13:42,000 --> 00:13:44,000

more than enough to get Jamie airborne.

187

00:13:44,000 --> 00:13:50,000

Adam carefully cuts thin layers of roofing foam, which stack together igloo fashion,

188

00:13:50,000 --> 00:13:52,000

to form the basic body of the cowling.

189

00:13:52,000 --> 00:14:00,000

This appeals to both Jamie and I in a very sort of deep, deep core level of interest for us.

190

00:14:00,000 --> 00:14:04,000

It is exactly the kind of thing that, you know, once we did the research,

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00:14:04,000 --> 00:14:07,000

and no one's actually really flown one of these things that we can find,

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00:14:07,000 --> 00:14:10,000

it would be amazing if we actually were able to build one to fly.

193

00:14:10,000 --> 00:14:13,000

The cowling design seems solid enough,

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00:14:13,000 --> 00:14:19,000

but Jamie's finding that the plans for the main body of the backpack have as many holes as the average tea bag.

195

00:14:19,000 --> 00:14:24,000

There's stuff, the basic thing that's going on here is maybe not that wacky,

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00:14:24,000 --> 00:14:27,000

but when I get into the details, it's like, idiotic.

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00:14:27,000 --> 00:14:33,000

They call for the 90-pound engine to be bolted straight onto a wafer-thin aluminum sheet.

198

00:14:33,000 --> 00:14:37,000

And this thing's just socked right in the middle of this 16-inch sheet.

199

00:14:37,000 --> 00:14:39,000

And the engine's on there.

200

00:14:39,000 --> 00:14:40,000

A 62-horsepower engine.

201

00:14:40,000 --> 00:14:42,000

Mounted on 16-inch aluminum.

202

00:14:42,000 --> 00:14:45,000

I'm not going to get near it with it operating.

203

00:14:45,000 --> 00:14:48,000

I mean, I'm not going to, there's no way in hell I'm going to get in this thing.

204

00:14:48,000 --> 00:14:50,000

I mean, it's terrifying.

205

00:14:50,000 --> 00:14:52,000

The guys have got mixed feelings about the plans,

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00:14:52,000 --> 00:14:57,000

which are a cocktail of the good, the bad, and the downright ugly.

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00:14:58,000 --> 00:15:04,000

It's like frustrating and almost disgusting how poor these plans are.

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00:15:04,000 --> 00:15:09,000

And yet the stuff that he's kind of coming up with isn't all that bad.

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00:15:09,000 --> 00:15:14,000

While at first glance they seem easily like the work of a crazy person,

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00:15:14,000 --> 00:15:18,000

it all seems, I mean, sort of crazily plausible that it could fly,

211

00:15:18,000 --> 00:15:20,000

but again, the devil is in the details.

212

00:15:20,000 --> 00:15:25,000

In the interests of safety, Jamie adds a plate to strengthen the engine mounts.

213

00:15:26,000 --> 00:15:29,000

Then he blocks out the basic structure of the backpack.

214

00:15:29,000 --> 00:15:31,000

That looks like it ought to make sense.

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00:15:31,000 --> 00:15:36,000

The propellers arrive, specially made by a hovercraft manufacturer.

216

00:15:36,000 --> 00:15:41,000

Hard to imagine these two picking you up off the ground, huh?

217

00:15:41,000 --> 00:15:46,000

It's going to be like, I think that's about what it is.

218

00:15:46,000 --> 00:15:47,000

Yeah.

219

00:15:47,000 --> 00:15:49,000

Okay, well, onward to network.

220

00:15:49,000 --> 00:15:54,000

Despite their misgivings, it's not necessarily a case of pigs might fly.

221

00:15:54,000 --> 00:16:01,000

Based on the initial number crunching that I've done, this thing could actually fly.

222

00:16:01,000 --> 00:16:08,000

And, you know, the fact that we haven't actually seen anybody flying with it is sort of like,

223

00:16:08,000 --> 00:16:10,000

what's going on here?

224

00:16:10,000 --> 00:16:12,000

Are we going to like be the first ones?

225

00:16:15,000 --> 00:16:21,000

The build team is testing the myth that pyramids have strange powers of preservation.

226

00:16:21,000 --> 00:16:29,000

They'll build four scale models in which they'll place some milk, half an apple, half a razor, and half a flower.

227

00:16:29,000 --> 00:16:34,000

The other halves, the controls, will sit outside the pyramids.

228

00:16:34,000 --> 00:16:43,000

According to the myth, their models must have pyramid perfect dimensions to ensure any cosmic power is cranked up to the maths.

229

00:16:43,000 --> 00:16:46,000

It's a worry, it is going to be a golden pyramid.

230

00:16:46,000 --> 00:16:53,000

And apparently for the sharpest razors and freshest fruit, the pyramids must align with magnetic north.

231

00:16:53,000 --> 00:16:58,000

The build team really is doing all they can to test this loopy legend.

232

00:16:58,000 --> 00:17:01,000

Should we cut these flowers off, put one in and one out?

233

00:17:01,000 --> 00:17:05,000

Actually, we're going to take one of the flowers and we're going to slice it in half.

234

00:17:05,000 --> 00:17:08,000

Carrie slices a rose with a razor.

235

00:17:08,000 --> 00:17:13,000

While Tori goes overboard on an apple with a chop saw.

236

00:17:13,000 --> 00:17:20,000

It's a clean cut, perfect, with a dirty blade, hardly a laboratory dissection.

237

00:17:20,000 --> 00:17:27,000

Carrie also sets up the milk for the preservation test, before moving on to something sharper.

238

00:17:27,000 --> 00:17:33,000

I'm dulling this razor so I can stick it into the pyramid and sharpen it.

239

00:17:33,000 --> 00:17:39,000

The team places one half of each item inside the pyramids one third of the way up.

240

00:17:39,000 --> 00:17:47,000

That's the location of the king's burial chamber in the real thing, and supposedly the locus of maximum power.

241

00:17:47,000 --> 00:17:50,000

Now, let the rotting commence.

242

00:17:50,000 --> 00:17:54,000

But first, another slightly more involved experiment.

243

00:17:54,000 --> 00:18:00,000

Well, we're going to get Tori all shaved up with a razor designated for each side of his face.

244

00:18:00,000 --> 00:18:07,000

And then we're going to stick one of these inside the pyramid to see if possibly it gets sharper or gives him a cleaner shave on a daily basis.

245

00:18:09,000 --> 00:18:15,000

So for the next two weeks, Tori's going to be shaving for science.

246

00:18:15,000 --> 00:18:19,000

Alright, so I've shaved it about the same on each side. They're about the same dullness.

247

00:18:19,000 --> 00:18:25,000

So we're going to stick this one in the pyramid, this one outside of the pyramid, see if this one gets any sharper.

248

00:18:25,000 --> 00:18:30,000

Like everything else, they're aligned to magnetic north and boosted in height.

249

00:18:30,000 --> 00:18:33,000

Now, the waiting begins.

250

00:18:33,000 --> 00:18:37,000

For the sake of science, keep an open mind.

251

00:18:39,000 --> 00:18:42,000

It's one week into the jet pack assembly.

252

00:18:42,000 --> 00:18:44,000

Can you crash?

253

00:18:44,000 --> 00:18:45,000

Yeah, I'll show you.

254

00:18:45,000 --> 00:18:46,000

Let's crash into that cliff.

255

00:18:46,000 --> 00:18:48,000

I don't know. We're going to go for the balloon.

256

00:18:51,000 --> 00:18:58,000

Adam and Jamie are paying a visit to the Hiller Aviation Museum to learn more about personal flying machines.

257

00:18:58,000 --> 00:19:03,000

And who better to guide them around than a man named after a compass?

258

00:19:03,000 --> 00:19:11,000

My name is North East West, N-O-R-T-H-E-A-S-T-W-E-S-T, and I'm director at the Gallery at the Hiller Aviation Museum.

259

00:19:11,000 --> 00:19:14,000

So, like what happened to South?

260

00:19:14,000 --> 00:19:23,000

This is the Granddaddy of Jet Packs, the Hiller Platform, named after its inventor, Stanley Hiller, and funded by the Office of Naval Research.

261

00:19:23,000 --> 00:19:26,000

Is this one of the earliest ducted fan designs?

262

00:19:26,000 --> 00:19:30,000

This is the earliest ducted fan. This is the first ducted fan that ever lifted a man.

263

00:19:30,000 --> 00:19:32,000

Really? Yes.

264

00:19:33,000 --> 00:19:41,000

The Hiller Platform was more magic carpet than jet pack, with the pilot standing above a single large ducted fan.

265

00:19:41,000 --> 00:19:51,000

The inaugural flight took place in strict secrecy in January 1955, but when the military went public later that year, the whole world wanted one.

266

00:19:51,000 --> 00:19:53,000

I'd love one of these at home.

267

00:19:54,000 --> 00:20:00,000

Well, the development cost on this back in the early 50s was still about a half a million dollars, so it's another reason we all have one sitting at home.

268

00:20:00,000 --> 00:20:02,000

But I think safety more than anything.

269

00:20:02,000 --> 00:20:04,000

And we're going to build one for a couple grand.

270

00:20:05,000 --> 00:20:11,000

Even though the platform flew, the military saw it as unsafe and abandoned the project.

271

00:20:11,000 --> 00:20:19,000

Only seven vehicles were ever built, but the principle of ducted fan-powered flight was off the ground.

272

00:20:20,000 --> 00:20:26,000

This solo-track device, developed in the 1990s, looks almost familiar.

273

00:20:26,000 --> 00:20:30,000

Dammit, we don't need to build one of these. We already found one.

274

00:20:30,000 --> 00:20:37,000

Like their work in progress, the solo-track is powered by a pair of ducted fans driven by a gas engine.

275

00:20:38,000 --> 00:20:43,000

It's amazing to see it here, because you can just see the hand-built aspect of it.

276

00:20:43,000 --> 00:20:50,000

Once you start to really see the parts up close, it's really apparent that humans built it. I love that aspect.

277

00:20:51,000 --> 00:20:57,000

This prototype never flew, but with military backing, its offspring were more successful.

278

00:20:59,000 --> 00:21:09,000

A Hollywood version of the solo-track device flew into action in the movie Agent Cody Banks, but it only soared with the help of special effects.

279

00:21:10,000 --> 00:21:14,000

In reality, this sort of performance is a long way off.

280

00:21:15,000 --> 00:21:20,000

This is the real thing on its maiden flight in November 2003.

281

00:21:20,000 --> 00:21:26,000

It took seven years and ten million dollars just to get this far.

282

00:21:27,000 --> 00:21:30,000

So where does that leave the home builder?

283

00:21:30,000 --> 00:21:35,000

North, have you heard the myth or idea that you could actually buy plans?

284

00:21:35,000 --> 00:21:40,000

Really simple plans, actually, for something quite like the solo-track here and build it yourself?

285

00:21:40,000 --> 00:21:42,000

I have a whole drawer full of them.

286

00:21:42,000 --> 00:21:44,000

Really? Yes.

287

00:21:44,000 --> 00:21:47,000

Well, do you know of anybody that's actually followed through and built the things?

288

00:21:47,000 --> 00:21:53,000

Not with a vehicle like this. I've never seen anything like this type of lifting vehicle except for the solo-track.

289

00:21:53,000 --> 00:22:02,000

Adam and Jamie leave the museum with mixed emotions. They've learned that ducted fan devices can fly, but only just.

290

00:22:02,000 --> 00:22:05,000

The project hangs in the balance.

291

00:22:13,000 --> 00:22:19,000

The mythbusters have just three weeks left to build a jet pack from plans purchased off the Internet.

292

00:22:20,000 --> 00:22:25,000

But the more time passes, the less confident they are about getting airborne.

293

00:22:25,000 --> 00:22:31,000

I'd say 15% chance of someone levitating in any way. Which is actually pretty high.

294

00:22:32,000 --> 00:22:37,000

But again, the math is all there. It's all in the details. You know what? I'm going to lower that.

295

00:22:37,000 --> 00:22:43,000

I'd say 5% chance that someone flies. 80% chance that this thing makes a hell of a racket.

296

00:22:45,000 --> 00:22:49,000

And 15% chance that there's some horrible, horrible disaster with it.

297

00:22:50,000 --> 00:22:53,000

Meanwhile, Christmas has come early for Jamie.

298

00:22:53,000 --> 00:22:59,000

Well, this is a great little engine, but we had a fan offer us another engine that's a little lighter.

299

00:22:59,000 --> 00:23:03,000

And yet it has the same power. I'm all about having a lighter engine.

300

00:23:03,000 --> 00:23:06,000

And so we're going to return this.

301

00:23:06,000 --> 00:23:11,000

Jamie's also decided that he needs to make a major change to the plans.

302

00:23:11,000 --> 00:23:15,000

Having been to the Hiller Aviation Museum, there's one consistent theme that keeps coming up.

303

00:23:15,000 --> 00:23:18,000

And that is that these devices have stability problems.

304

00:23:18,000 --> 00:23:26,000

In short of doing something really complicated and expensive, an idea that I had was to move the engine down low.

305

00:23:27,000 --> 00:23:34,000

By lowering the engine and elongating the backpack, Jamie hopes to gain extra stability if he can get airborne.

306

00:23:35,000 --> 00:23:41,000

He can't afford a gyro stabilizer, but focusing the weight lower down is the next best thing.

307

00:23:43,000 --> 00:23:49,000

Despite the new engine, the new design means a heavier machine, but Jamie doesn't seem concerned.

308

00:23:51,000 --> 00:23:52,000

It's going to be fun.

309

00:23:53,000 --> 00:23:58,000

Day 10, and Adam checks his cowlings, which he's left to set overnight.

310

00:23:58,000 --> 00:24:03,000

There we go. One cowlick. I'm quite pleased with it.

311

00:24:03,000 --> 00:24:08,000

This thing's going to be mounted one here and one here.

312

00:24:09,000 --> 00:24:11,000

I'm ready to go, man.

313

00:24:12,000 --> 00:24:18,000

He's built a turntable so he can lay the foam cowlings into a ducted fan shape with maximum precision.

314

00:24:19,000 --> 00:24:22,000

So it actually seems to work okay.

315

00:24:23,000 --> 00:24:27,000

It leads me to understand that there's a lot of work to do to finish this.

316

00:24:27,000 --> 00:24:32,000

Several hours later, Adam's feeling down. You know, blue.

317

00:24:32,000 --> 00:24:40,000

This is awful. The hard part about doing two is that once you finish one, you're only halfway there.

318

00:24:41,000 --> 00:24:45,000

Each cowling takes Adam eight hours of solid sanding and shaping.

319

00:24:45,000 --> 00:24:49,000

The clock is ticking, but on balance he's pleased.

320

00:24:49,000 --> 00:24:59,000

I'm all told any average Joe could do this in their shop for about, like, you know, 75 bucks worth of material.

321

00:24:59,000 --> 00:25:03,000

And that's kind of the myth we're testing here. You know, can your average Joe do this?

322

00:25:05,000 --> 00:25:08,000

Jamie's been making good progress on his backpack extension.

323

00:25:08,000 --> 00:25:13,000

He's lowered the engine and fitted the elongated drive shaft.

324

00:25:13,000 --> 00:25:14,000

Perfect.

325

00:25:15,000 --> 00:25:18,000

Right on cue, the JetPack's drive system arrives.

326

00:25:18,000 --> 00:25:24,000

What we have here are the pulleys that will be mounted onto each propeller.

327

00:25:24,000 --> 00:25:31,000

This would be a drive belt and each propeller has one of these that goes from its hub to the central hub on the engine.

328

00:25:31,000 --> 00:25:35,000

And this would be the central hub.

329

00:25:37,000 --> 00:25:46,000

While Jamie installs the power transmission, Adam is psyching himself up for the next stage of cowling construction.

330

00:25:46,000 --> 00:25:48,000

Vacuum bagging.

331

00:25:48,000 --> 00:25:50,000

I'm actually a bit nervous.

332

00:25:50,000 --> 00:25:57,000

It's an aeronautical fiber-glassing technique designed to provide maximum strength with minimum weight.

333

00:25:58,000 --> 00:26:01,000

First, a layer of Kevlar.

334

00:26:01,000 --> 00:26:04,000

It's the material used in bulletproof vests.

335

00:26:04,000 --> 00:26:09,000

It won't add much weight, but it'll add a lot of strength in case of a catastrophic failure.

336

00:26:09,000 --> 00:26:15,000

He covers the entire foam cowling with strips of carbon fiber, which he coats in resin.

337

00:26:15,000 --> 00:26:18,000

Excellent, excellent, excellent. I'm very pleased.

338

00:26:19,000 --> 00:26:21,000

Then a layer of peel ply.

339

00:26:21,000 --> 00:26:24,000

My back is killing me though. It's like a real workout noise.

340

00:26:24,000 --> 00:26:27,000

Moving around, bending over, turning around, doing this.

341

00:26:27,000 --> 00:26:31,000

Finally, absorbent cloth to soak up the excess resin.

342

00:26:32,000 --> 00:26:34,000

God, I hope this works.

343

00:26:36,000 --> 00:26:40,000

The bag is placed around the cowling and Adam connects the vacuum pump.

344

00:26:41,000 --> 00:26:48,000

The pressure squeezes the resin into any air pockets, providing pound for pound the strongest possible finish.

345

00:26:48,000 --> 00:26:55,000

And finally, the pièce de résistance, an impromptu oven in the form of an electric blanket.

346

00:26:56,000 --> 00:26:58,000

And that's how you do it.

347

00:26:59,000 --> 00:27:05,000

Adam leaves the cowling to bake overnight and heads back to the backpack where Jamie's ready for a balance test.

348

00:27:05,000 --> 00:27:07,000

I think we're ready to see how it hangs.

349

00:27:07,000 --> 00:27:10,000

Can these be cinched up tighter? I need them like...

350

00:27:10,000 --> 00:27:13,000

I'm uncomfortable with all this contact with your groin.

351

00:27:13,000 --> 00:27:14,000

Contact!

352

00:27:17,000 --> 00:27:20,000

Lowering the engine seems to have paid off.

353

00:27:20,000 --> 00:27:26,000

It actually kind of came out like I'd hoped the engine is balancing off the body weight in the front,

354

00:27:26,000 --> 00:27:33,000

the way that it's all kind of configured, which is honestly not too far different than what the original plans were.

355

00:27:34,000 --> 00:27:37,000

Alright, so you guys ready for a break? Let's go.

356

00:27:37,000 --> 00:27:39,000

Alright, catch you later, Jim.

357

00:27:39,000 --> 00:27:41,000

Bye, Jamie. See you around.

358

00:27:41,000 --> 00:27:46,000

Adam splits to unwrap his cowlings, and he seems, well, pleased.

359

00:27:46,000 --> 00:27:48,000

Oh, that outside edge looks pretty good.

360

00:27:48,000 --> 00:27:51,000

Oh, I'm really pleased about this.

361

00:27:51,000 --> 00:27:52,000

You know what, Jamie?

362

00:27:52,000 --> 00:27:53,000

What?

363

00:27:53,000 --> 00:27:54,000

I'm kind of pleased.

364

00:27:54,000 --> 00:27:55,000

Yep, he's pleased.

365

00:27:55,000 --> 00:27:57,000

I am psyched.

366

00:27:57,000 --> 00:28:00,000

A final layer of epoxy gives a pleasing finish.

367

00:28:00,000 --> 00:28:02,000

I'm pretty bloody pleased with how smooth it is.

368

00:28:02,000 --> 00:28:06,000

I slept in them last night, so I might look a little pleased.

369

00:28:06,000 --> 00:28:13,000

There's just ten days left, but when the first cowling goes on, so does the light at the end of the tunnel.

370

00:28:15,000 --> 00:28:17,000

Hold on, I want to stem back and look at this.

371

00:28:18,000 --> 00:28:19,000

Goddamn.

372

00:28:21,000 --> 00:28:23,000

Honey, I'm home.

373

00:28:24,000 --> 00:28:28,000

Just in time for some important visitors.

374

00:28:28,000 --> 00:28:32,000

Inspectors from the Federal Aviation Authority, the FAA.

375

00:28:32,000 --> 00:28:34,000

Thanks for coming down, guys.

376

00:28:34,000 --> 00:28:38,000

They're here on official duty to classify the jet pack.

377

00:28:38,000 --> 00:28:41,000

Unofficially, they're just plain curious.

378

00:28:41,000 --> 00:28:44,000

So what do you guys think? How airworthy does it look to you?

379

00:28:44,000 --> 00:28:46,000

It's like no aircraft I've ever seen.

380

00:28:46,000 --> 00:28:47,000

Would you guys fly?

381

00:28:47,000 --> 00:28:49,000

Absolutely not.

382

00:28:50,000 --> 00:28:55,000

You know, although we haven't been able to get them on the phone, do you have a message for the guys who sell these plants?

383

00:28:55,000 --> 00:28:58,000

I'm just concerned for your safety.

384

00:28:58,000 --> 00:29:03,000

Really, if you were going to actually fly this around, just because it's so unproven.

385

00:29:03,000 --> 00:29:05,000

That's the bad news.

386

00:29:05,000 --> 00:29:09,000

The good news is that the jet pack gets an ultralight classification,

387

00:29:09,000 --> 00:29:13,000

which means a green light for an unregulated test flight.

388

00:29:13,000 --> 00:29:15,000

The verdict was great.

389

00:29:15,000 --> 00:29:19,000

This loophole occurs where, if it's under a certain weight,

390

00:29:19,000 --> 00:29:25,000

you can strap whatever you want to your back and fly it as long as you fly it out of their airspace that they care about,

391

00:29:25,000 --> 00:29:27,000

and as long as you don't hurt any other people.

392

00:29:27,000 --> 00:29:32,000

The final week of construction is a mad rush to finish on time.

393

00:29:32,000 --> 00:29:34,000

What a bracket!

394

00:29:34,000 --> 00:29:40,000

The cowlings are secured in place, and directional vanes are attached.

395

00:29:40,000 --> 00:29:47,000

Jamie makes another change to the plans by adding reinforcement struts to support the ducted fans.

396

00:29:47,000 --> 00:29:53,000

Finally, he installs the armrests, joysticks, and throttle control.

397

00:29:53,000 --> 00:29:58,000

As the clock runs down, the stress levels go up.

398

00:29:58,000 --> 00:30:01,000

This is the expression I'm going to keep on making during this.

399

00:30:01,000 --> 00:30:03,000

That.

400

00:30:04,000 --> 00:30:08,000

Exactly four weeks after they started the build,

401

00:30:08,000 --> 00:30:13,000

they roll out the jet pack to the test site at the front of the shop.

402

00:30:13,000 --> 00:30:15,000

Damn, this is a sexy machine!

403

00:30:15,000 --> 00:30:18,000

It's been a month of moving mountains.

404

00:30:18,000 --> 00:30:22,000

Have the mythbusters pulled off a miracle of amateur aeronautics?

405

00:30:22,000 --> 00:30:25,000

Or is this jet pack a dead duck?

406

00:30:25,000 --> 00:30:30,000

You know, we've been working on so many parts of this for a combined total of four weeks now.

407

00:30:30,000 --> 00:30:33,000

It's the longest build we've ever done on mythbusters.

408

00:30:33,000 --> 00:30:36,000

I'm really, really psyched to see it go.

409

00:30:36,000 --> 00:30:40,000

I'm a little scared, but mostly I'm completely psyched.

410

00:30:40,000 --> 00:30:45,000

I mean, even if this thing's a miserable failure, I'm tickle-pink.

411

00:30:52,000 --> 00:30:56,000

The build team are testing whether pyramids have mystical powers.

412

00:30:56,000 --> 00:31:00,000

And they really keep fruit fresh and razor sharp.

413

00:31:00,000 --> 00:31:05,000

While they wait for things to rot or not, Tauri's off to the barbers.

414

00:31:05,000 --> 00:31:10,000

Ah, this is not cool.

415

00:31:10,000 --> 00:31:13,000

Do you think it's me or the razor?

416

00:31:13,000 --> 00:31:14,000

I don't know.

417

00:31:14,000 --> 00:31:17,000

Okay, I think we're done on that side.

418

00:31:18,000 --> 00:31:23,000

Pyramid's side done, but the torture continues with the control.

419

00:31:23,000 --> 00:31:26,000

So, was there a difference?

420

00:31:26,000 --> 00:31:31,000

The left side definitely felt duller on the right side.

421

00:31:31,000 --> 00:31:34,000

I'm just glad this whole experience is over.

422

00:31:35,000 --> 00:31:37,000

The left side was duller?

423

00:31:37,000 --> 00:31:41,000

Well, maybe there is something to pyramid power after all.

424

00:31:41,000 --> 00:31:43,000

Let's check up on the rest.

425

00:31:43,000 --> 00:31:48,000

Something about rotting milk and rotting apple that just grosses me out.

426

00:31:48,000 --> 00:31:52,000

The milk's turning to cheese, but that's not all that's happening.

427

00:31:52,000 --> 00:31:57,000

The apple in this one is actually rotting at a slower rate than that one.

428

00:31:57,000 --> 00:31:58,000

I know.

429

00:31:58,000 --> 00:32:00,000

I feel the power of it.

430

00:32:00,000 --> 00:32:05,000

I don't know, I'm so bummed this oogie boogie stuff is actually working.

431

00:32:05,000 --> 00:32:09,000

Like it or not, the apples are rotting at different rates.

432

00:32:09,000 --> 00:32:15,000

Is this pyramid power at work or has the apple experiment gone a pair-shaped?

433

00:32:15,000 --> 00:32:17,000

Time to consult an Egyptologist.

434

00:32:17,000 --> 00:32:19,000

What do you know about the power of the pyramid?

435

00:32:19,000 --> 00:32:28,000

Well, the myth is that the shape itself was part of the process of preserving the body of the king.

436

00:32:28,000 --> 00:32:33,000

And by extension, I suppose there are people who think that the preserve's just about anything placed inside of it.

437

00:32:33,000 --> 00:32:39,000

As far as you know, in ancient Egyptian thinking, there's no evidence that they thought about that at all.

438

00:32:41,000 --> 00:32:44,000

Could the mummy's curse spell the end for pyramid power?

439

00:32:45,000 --> 00:32:52,000

Dr. Manning reckons that it's mummification that preserved the bodies of Egyptian kings, not the shape at all.

440

00:32:54,000 --> 00:32:56,000

So how's the apple getting on?

441

00:32:58,000 --> 00:33:00,000

Well, it's been 15 days.

442

00:33:00,000 --> 00:33:05,000

This one is definitely rotting at a slower rate than this one.

443

00:33:06,000 --> 00:33:09,000

The pyramid apple defies logic.

444

00:33:10,000 --> 00:33:14,000

It's kept its color, its shape, and its mold-free.

445

00:33:16,000 --> 00:33:23,000

Flowers seem to be doing the same thing. They're both dried out. There's no real difference. I don't see any difference.

446

00:33:24,000 --> 00:33:26,000

And how about the milk?

447

00:33:26,000 --> 00:33:37,000

Oh my God! There's like little critters crawling around in their tits.

448

00:33:37,000 --> 00:33:38,000

Is there any of those?

449

00:33:38,000 --> 00:33:40,000

Yeah, they're little maggots.

450

00:33:40,000 --> 00:33:47,000

Milk maggots are mother-natures used by date, but razor blades can be tested with technology.

451

00:33:47,000 --> 00:33:55,000

We've brought our razor blades here to the California Academy of Sciences to see if we can put them under the electron microscope, see if the pyramid has had any effect on them.

452

00:33:56,000 --> 00:33:57,000

Hi Scott.

453

00:33:57,000 --> 00:33:58,000

Hi.

454

00:33:58,000 --> 00:33:59,000

Kari, I'm with the MythBusters.

455

00:33:59,000 --> 00:34:00,000

Glad to meet you.

456

00:34:00,000 --> 00:34:03,000

Scott's a guru of the electron microscope.

457

00:34:04,000 --> 00:34:09,000

First, the control razor at 2,500 times magnification.

458

00:34:09,000 --> 00:34:14,000

It's just hard to believe that this little forest right here is the edge of a razor blade.

459

00:34:15,000 --> 00:34:20,000

The roughness means the razor's edge is blunt. So what about the pyramid razor?

460

00:34:21,000 --> 00:34:23,000

They look pretty much identical to me.

461

00:34:24,000 --> 00:34:28,000

Side by side, photos show how similar they are.

462

00:34:28,000 --> 00:34:34,000

At 3 magnifications, they're almost identical, and they're both different from a brand new blade.

463

00:34:35,000 --> 00:34:41,000

So pyramid power sharpening seems pretty ineffectual. Would Tari agree?

464

00:34:41,000 --> 00:34:47,000

Alright, so this is day 16, the last day of our experiment.

465

00:34:47,000 --> 00:34:48,000

Are you ready?

466

00:34:48,000 --> 00:34:49,000

I'm ready.

467

00:34:49,000 --> 00:34:51,000

First up, the control razor.

468

00:34:51,000 --> 00:34:55,000

Ow, this is not very sharp at all.

469

00:34:56,000 --> 00:34:58,000

It's actually kind of hard to watch.

470

00:34:59,000 --> 00:35:01,000

It's as blunt as a bowl of pudding.

471

00:35:01,000 --> 00:35:02,000

You want to go for the pyramid?

472

00:35:02,000 --> 00:35:04,000

Yeah, hopefully that will be sharp.

473

00:35:05,000 --> 00:35:07,000

I hope for your sake, pyramid power works.

474

00:35:08,000 --> 00:35:10,000

Why? I bet you enjoyed seeing me in pain.

475

00:35:10,000 --> 00:35:11,000

Of course not.

476

00:35:11,000 --> 00:35:12,000

How's that feel?

477

00:35:12,000 --> 00:35:17,000

This is like no better than the other one. It's just as dull.

478

00:35:18,000 --> 00:35:21,000

There's like cooling hairs out of my face.

479

00:35:21,000 --> 00:35:22,000

Cool.

480

00:35:29,000 --> 00:35:31,000

It sucks. This thing is not sharp at all.

481

00:35:31,000 --> 00:35:32,000

I need a real razor.

482

00:35:33,000 --> 00:35:35,000

Tari exits for medical help.

483

00:35:35,000 --> 00:35:38,000

Oh man, I'm sure glad that this myth is over.

484

00:35:39,000 --> 00:35:40,000

Dude, are you alright?

485

00:35:40,000 --> 00:35:42,000

Does it look like I'm alright?

486

00:35:44,000 --> 00:35:47,000

We have to say that this part of the myth is totally busted.

487

00:35:47,000 --> 00:35:49,000

I think your face is busted.

488

00:35:49,000 --> 00:35:51,000

But is Mojo still working?

489

00:35:51,000 --> 00:35:53,000

Baby, give us a kiss.

490

00:35:55,000 --> 00:35:57,000

You don't find me hot like this?

491

00:36:01,000 --> 00:36:02,000

You look like Al.

492

00:36:09,000 --> 00:36:14,000

The Mythbusters quest to build a flying jetpack has taken them to Davis, California,

493

00:36:14,000 --> 00:36:16,000

home of the Moller Skycar.

494

00:36:16,000 --> 00:36:19,000

Oh man, I have to have one of these.

495

00:36:19,000 --> 00:36:22,000

Look, my kid's in here too.

496

00:36:22,000 --> 00:36:30,000

Dr. Paul Moller has spent half a century and \$200 million trying to develop a flying car.

497

00:36:30,000 --> 00:36:34,000

According to Moller, this is the future.

498

00:36:34,000 --> 00:36:41,000

Is this something that I'd be able to purchase eventually and like, you know, fly it in San Francisco to my job?

499

00:36:41,000 --> 00:36:50,000

Well, I believe as Dr. Daniel Golden, the ex-head of NASA, that this vehicle will be in the hands of 25% of the population within 10 years.

500

00:36:50,000 --> 00:36:55,000

And he said he went on further and he said be within 90% of the population within 25 years.

501

00:36:55,000 --> 00:37:00,000

If he's right, it won't be long before we're flying to work, like George Jetson.

502

00:37:00,000 --> 00:37:07,000

For decades, inventors have been promising air vehicles, but the hard fact is, they're still

science fiction.

503

00:37:08,000 --> 00:37:11,000

What do you think? Is this all the hoax or what?

504

00:37:11,000 --> 00:37:14,000

No, I think this is cool.

505

00:37:14,000 --> 00:37:23,000

We need these things. Unless we want to pave the whole planet, you know, and put roads everywhere, it's like the highways are getting too full.

506

00:37:23,000 --> 00:37:25,000

What else are you going to do?

507

00:37:25,000 --> 00:37:27,000

Build your own jetpack, of course.

508

00:37:27,000 --> 00:37:33,000

In just one month, Adam and Jamie have built their own from plans purchased on the Internet.

509

00:37:34,000 --> 00:37:37,000

Now, the moment of truth has arrived.

510

00:37:37,000 --> 00:37:43,000

I give this device about a 25% chance of actually working reasonably well.

511

00:37:43,000 --> 00:37:49,000

The other 75% chance, I would say, is catastrophic failure.

512

00:37:49,000 --> 00:37:56,000

And there is a 100% chance that I am not going to be flying around untethered on this thing.

513

00:37:57,000 --> 00:38:03,000

The jetpack remains potentially deadly, so a buster steps up to the plate.

514

00:38:03,000 --> 00:38:07,000

Meanwhile, Adam's having an attack of the clear light of days.

515

00:38:07,000 --> 00:38:09,000

I don't know what illusions Jamie might be under.

516

00:38:09,000 --> 00:38:15,000

I've been pretty clear all along that this thing has a very, very tiny chance of actually functioning.

517

00:38:15,000 --> 00:38:20,000

I give it 10% that it actually is. 10% of my being really generous.

518

00:38:20,000 --> 00:38:23,000

Let's say 2% that it's a viable flying machine.

519

00:38:26,000 --> 00:38:28,000

So the clever money's on gravity.

520

00:38:28,000 --> 00:38:35,000

With catastrophic failure always an option on Mythbusters, the guys take the usual precautions.

521

00:38:35,000 --> 00:38:40,000

Now it's time to see if buster can actually rise up in this thing.

522

00:38:40,000 --> 00:38:46,000

This is the first official flying test of the Widowmaker.

523

00:38:46,000 --> 00:38:48,000

Alright, starting up when you're ready, Jamie.

524

00:38:48,000 --> 00:38:49,000

Okay, go ahead.

525

00:38:49,000 --> 00:38:54,000

Buster's wife should be checking his life insurance right about now.

526

00:38:57,000 --> 00:39:06,000

I'm just going to spin up probably to about 4500 RPM and Jamie's just checking the system out.

527

00:39:06,000 --> 00:39:09,000

See if anything's abnormally hot.

528

00:39:12,000 --> 00:39:15,000

Everything looks cool, so Jamie opens the throttle.

529

00:39:18,000 --> 00:39:20,000

It's all systems go.

530

00:39:21,000 --> 00:39:23,000

Countdown begins.

531

00:39:26,000 --> 00:39:29,000

The Widowmaker dances on the launch pad.

532

00:39:29,000 --> 00:39:32,000

A tantalizing sign of lift.

533

00:39:33,000 --> 00:39:36,000

But takeoff is aborted.

534

00:39:38,000 --> 00:39:41,000

Jamie thinks the fuel mixture may be too rich.

535

00:39:41,000 --> 00:39:48,000

I'm getting, my eyes are really stinging and we weren't reaching full RPM.

536

00:39:48,000 --> 00:39:53,000

I think there's a throttle, high speed throttle needle on it.

537

00:39:53,000 --> 00:39:54,000

Okay.

538

00:39:54,000 --> 00:39:55,000

Adjustment.

539

00:39:55,000 --> 00:40:02,000

The engine is not reaching its power band, so they do some fine tuning, adjust the throttle cable,

540

00:40:02,000 --> 00:40:07,000

and prime the carburetors for another shot at immortality.

541

00:40:13,000 --> 00:40:15,000

The power of Ancient Egypt.

542

00:40:15,000 --> 00:40:20,000

The build team have been trying to harness the mystical force of the pyramids

543

00:40:20,000 --> 00:40:24,000

and have unearthed a bit of a surprise.

544

00:40:24,000 --> 00:40:27,000

Alright guys, you've been testing for a couple of weeks now.

545

00:40:27,000 --> 00:40:30,000

I want to ask you about how some of these tests did.

546

00:40:30,000 --> 00:40:31,000

The milk?

547

00:40:31,000 --> 00:40:33,000

Ha ha, busted.

548

00:40:33,000 --> 00:40:34,000

Let's see the razor blade.

549

00:40:34,000 --> 00:40:35,000

That was busted.

550

00:40:35,000 --> 00:40:36,000

And the flour?

551

00:40:36,000 --> 00:40:37,000

Busted.

552

00:40:37,000 --> 00:40:39,000

You can't know any difference.

553

00:40:39,000 --> 00:40:40,000

The apple.

554

00:40:40,000 --> 00:40:44,000

Well, there was a little difference.

555

00:40:44,000 --> 00:40:45,000

Really?

556

00:40:45,000 --> 00:40:49,000

It seemed that the one inside the pyramid rotted at a much slower rate.

557

00:40:50,000 --> 00:40:52,000

There's no getting away from it.

558

00:40:52,000 --> 00:40:59,000

The pyramid apple isn't exactly crisp and juicy, but it's not as shriveled as the control.

559

00:40:59,000 --> 00:41:02,000

But there may be a non-mystical explanation.

560

00:41:02,000 --> 00:41:07,000

Tari forgot to sterilize the blade of the chop saw when he split the apple

561

00:41:07,000 --> 00:41:11,000

and may have given the two halves different microbial loads.

562

00:41:11,000 --> 00:41:18,000

So there's got to be one last test, this time with whole apples to avoid contamination.

563

00:41:18,000 --> 00:41:25,000

They're polished with bleach, then put under a UV light, a WMD for microbes.

564

00:41:25,000 --> 00:41:31,000

And in a fit of geometrical enthusiasm, they decide to test cube power too.

565

00:41:31,000 --> 00:41:34,000

If there's anything to pyramid power, this should be the setup.

566

00:41:34,000 --> 00:41:35,000

We'll find out.

567

00:41:35,000 --> 00:41:42,000

With everything pointing north, the apples are left to sit for four months.

568

00:41:42,000 --> 00:41:47,000

Time to put this pyramid puzzle to bed.

569

00:41:48,000 --> 00:41:50,000

Okay, that's pyramid.

570

00:41:50,000 --> 00:41:53,000

This is the control. That's nothing.

571

00:41:53,000 --> 00:41:57,000

And this is cube.

572

00:41:57,000 --> 00:42:02,000

Well, it's obvious that cube power is really bad for you.

573

00:42:02,000 --> 00:42:04,000

But what about the other two?

574

00:42:04,000 --> 00:42:06,000

I'm just going to take some representative samples.

575

00:42:06,000 --> 00:42:09,000

Pyramid regular.

576

00:42:09,000 --> 00:42:11,000

I'm looking at the one of the pyramid.

577

00:42:11,000 --> 00:42:13,000

I'm looking at the one out in open air.

578

00:42:13,000 --> 00:42:16,000

And I don't see any appreciable difference.

579

00:42:16,000 --> 00:42:17,000

I'd agree.

580

00:42:17,000 --> 00:42:19,000

So I think that's myth busted.

581

00:42:19,000 --> 00:42:21,000

I can call this myth busted, please.

582

00:42:21,000 --> 00:42:24,000

And can we not do any more of these Uggie Boogie myths?

583

00:42:28,000 --> 00:42:33,000

Back at the launch pad, Adam and Jamie have retuned the jet packs engine.

584

00:42:33,000 --> 00:42:37,000

And it's time for a second bite at the Levitation Cherry.

585

00:42:37,000 --> 00:42:42,000

Here it goes.

586

00:42:42,000 --> 00:42:44,000

I want lift off this guy.

587

00:42:44,000 --> 00:42:46,000

Round two.

588

00:42:51,000 --> 00:42:54,000

This time the engine hits the butter zone.

589

00:42:56,000 --> 00:42:59,000

Jamie's whiskers are twitching.

590

00:43:00,000 --> 00:43:04,000

The tachometer reaches 5600 RPM.

591

00:43:07,000 --> 00:43:10,000

Gravity's got a fight on its hands.

592

00:43:14,000 --> 00:43:17,000

The jet pack leaves the ground.

593

00:43:18,000 --> 00:43:21,000

It's almost flying.

594

00:43:22,000 --> 00:43:24,000

But gravity wins out.

595

00:43:25,000 --> 00:43:27,000

Close but no cigar.

596

00:43:29,000 --> 00:43:31,000

It's getting to the borderline.

597

00:43:31,000 --> 00:43:32,000

It's right there.

598

00:43:32,000 --> 00:43:34,000

No, I can tell. It's right there.

599

00:43:34,000 --> 00:43:36,000

We've got 5600 RPM on that last one.

600

00:43:36,000 --> 00:43:38,000

We are at the power band.

601

00:43:38,000 --> 00:43:40,000

We are at the maximum output of this engine.

602

00:43:40,000 --> 00:43:42,000

We have too much weight.

603

00:43:42,000 --> 00:43:46,000

As far as the overall design, everything is functioning as it should.

604

00:43:46,000 --> 00:43:48,000

Except the entire machine.

605

00:43:49,000 --> 00:43:52,000

The engine is performing beautifully.

606

00:43:52,000 --> 00:43:54,000

It's all functioning.

607

00:43:54,000 --> 00:43:56,000

At this point we're just too heavy.

608

00:43:56,000 --> 00:43:59,000

According to Jamie, weight is not the main issue.

609

00:43:59,000 --> 00:44:00,000

It's thrust.

610

00:44:00,000 --> 00:44:03,000

We were given to understand we would get 500 pounds of thrust.

611

00:44:03,000 --> 00:44:06,000

This thing does not weigh 500 pounds.

612

00:44:06,000 --> 00:44:08,000

Why is it not getting off the ground?

613

00:44:08,000 --> 00:44:10,000

There's some kind of a thing with...

614

00:44:10,000 --> 00:44:15,000

The only place I can point to is something to do with the efficiency of the ducts.

615

00:44:15,000 --> 00:44:18,000

They attempt to maximize thrust by adding a layer of balsa

616

00:44:18,000 --> 00:44:21,000

between the propeller tips and the cowlings.

617

00:44:21,000 --> 00:44:24,000

The smaller the gap, the larger the thrust.

618

00:44:24,000 --> 00:44:26,000

Did you see that?

619

00:44:26,000 --> 00:44:28,000

Was that sexy or what?

620

00:44:28,000 --> 00:44:32,000

A thread test confirms that the air flow into the ducts is smooth and uniform.

621

00:44:33,000 --> 00:44:36,000

So they should be getting the correct thrust and lift.

622

00:44:36,000 --> 00:44:37,000

Perfect!

623

00:44:38,000 --> 00:44:42,000

But even with the modifications, the guys decide to lower the bar

624

00:44:42,000 --> 00:44:44,000

Keep your comments to yourself.

625

00:44:44,000 --> 00:44:46,000

and remove Buster from the hot seat.

626

00:44:46,000 --> 00:44:47,000

Okay.

627

00:44:47,000 --> 00:44:48,000

Take that!

628

00:44:48,000 --> 00:44:51,000

It's a retreat, but Jamie's philosophical.

629

00:44:51,000 --> 00:44:53,000

This is an ambitious project after all.

630

00:44:53,000 --> 00:44:56,000

You know, this is something that I keep saying.

631

00:44:56,000 --> 00:45:00,000

Like, somebody out there is spending tens of millions of dollars

632

00:45:00,000 --> 00:45:03,000

and decades of work developing a device like this.

633

00:45:03,000 --> 00:45:07,000

Buster out of the picture, the jet pack is 190 pounds lighter.

634

00:45:07,000 --> 00:45:09,000

It's now or never.

635

00:45:09,000 --> 00:45:10,000

All right.

636

00:45:10,000 --> 00:45:11,000

Are you ready?

637

00:45:11,000 --> 00:45:12,000

I think we're ready.

638

00:45:12,000 --> 00:45:14,000

Okay, go ahead.

639

00:45:14,000 --> 00:45:16,000

Test number three!

640

00:45:18,000 --> 00:45:21,000

Chocks away, but will it be lift off?

641

00:45:28,000 --> 00:45:32,000

It's trying, but it ain't flying.

642

00:45:34,000 --> 00:45:37,000

The game's finally up.

643

00:45:39,000 --> 00:45:43,000

It's not even providing all that much lift on its own.

644

00:45:43,000 --> 00:45:49,000

If it was correctly balanced, it would be flying on it without anything on it,

645

00:45:49,000 --> 00:45:51,000

but not with a whole lot of access.

646

00:45:51,000 --> 00:45:54,000

In other words, without a pilot.

647

00:45:54,000 --> 00:45:58,000

Even so, Jamie can't resist having a go in the Widowmaker.

648

00:45:58,000 --> 00:46:01,000

Mrs. Heineman, you should look away now.

649

00:46:01,000 --> 00:46:05,000

I have a sneaking feeling this is going to like,

650

00:46:05,000 --> 00:46:09,000

not exactly tickle in a certain unmentionable region,

651

00:46:09,000 --> 00:46:14,000

but it's going to be vibrating like crazy down there.

652

00:46:16,000 --> 00:46:18,000

What the hell are you writing out there?

653

00:46:18,000 --> 00:46:21,000

Pilot de Bommadier, do you read, over?

654

00:46:21,000 --> 00:46:23,000

Are you good?

655

00:46:23,000 --> 00:46:25,000

Uh, yeah.

656

00:46:31,000 --> 00:46:35,000

I'm standing on a traffic light with a drag racer.

657

00:46:35,000 --> 00:46:37,000

It smells like a kid.

658

00:46:50,000 --> 00:46:54,000

Looks like Jamie's going to be driving to work for a while yet.

659

00:46:54,000 --> 00:46:57,000

How did that feel, man?

660

00:46:57,000 --> 00:47:04,000

Well, the main thing that it feels like is that I'm in some kind of a mixer or something.

661

00:47:04,000 --> 00:47:10,000

I mean, it's like, your whole body is just like at a really high frequency vibration here.

662

00:47:10,000 --> 00:47:14,000

It's just that alone is enough to make me not want to fly around in this.

663

00:47:14,000 --> 00:47:16,000

I mean, it really is ridiculous.

664

00:47:16,000 --> 00:47:18,000

Seeing Jamie in the machine is just amazing.

665

00:47:18,000 --> 00:47:21,000

He really does, you know, it's amazing.

666

00:47:21,000 --> 00:47:26,000

And I'm looking like one of those turn of the century guys in the huge flying machine

667

00:47:26,000 --> 00:47:29,000

that goes off the ramp and off the cliff.

668

00:47:29,000 --> 00:47:36,000

And unfortunately, he's met with about as much success as those magnificent men in their flying machines.

669

00:47:42,000 --> 00:47:44,000

We're both exhausted of this project.

670

00:47:44,000 --> 00:47:47,000

I believe, I'm personally exhausted of this project.

671

00:47:47,000 --> 00:47:52,000

We've done all due diligence on making this thing work based on the information we've had,

672

00:47:52,000 --> 00:47:54,000

but it's nowhere in the ballpark.

673

00:47:54,000 --> 00:47:56,000

I don't get it.

674

00:47:56,000 --> 00:47:58,000

I miss the fire.

675

00:48:00,000 --> 00:48:01,000

So how did we do?

676

00:48:01,000 --> 00:48:07,000

Well, we didn't get off the ground, so I guess we failed as much as I hate to admit it.

677

00:48:07,000 --> 00:48:10,000

But we succeeded, I think, in busting a myth.

678

00:48:10,000 --> 00:48:15,000

Yeah, there's no way that the average Joe could take those plans

679

00:48:16,000 --> 00:48:18,000

and get off the ground with them.

680

00:48:18,000 --> 00:48:20,000

They were incredibly sparse.

681

00:48:20,000 --> 00:48:22,000

There wasn't enough data.

682

00:48:22,000 --> 00:48:23,000

There weren't enough details.

683

00:48:23,000 --> 00:48:25,000

They were drawn on cocktail napkins.

684

00:48:25,000 --> 00:48:27,000

Yeah, it was ridiculous.

685

00:48:27,000 --> 00:48:28,000

What do you think?

686

00:48:28,000 --> 00:48:32,000

Do you think at some point in the future we will be flying personal jetpacks to work?

687

00:48:32,000 --> 00:48:34,000

I don't think so.

688

00:48:34,000 --> 00:48:38,000

There's one really important thing to keep in mind about this type of device,

689

00:48:38,000 --> 00:48:40,000

and that is that you have no backup.

690

00:48:40,000 --> 00:48:43,000

If you have a failure, you're going down like a stone.

691

00:48:43,000 --> 00:48:44,000

You're going to die.

692

00:48:44,000 --> 00:48:49,000

And for that reason, I don't think that you're going to be riding around in a personal jetpack

693

00:48:49,000 --> 00:48:52,000

any time in the near future at all.

694

00:48:52,000 --> 00:48:54,000

So myth totally busted?

695

00:48:54,000 --> 00:48:56,000

Yeah, totally busted.

696

00:49:13,000 --> 00:49:15,000

Thanks for watching.

